

chitinous membrane from this triangle to the base of the clasp, seen only in this species.

e. Shape of the bridge. The cleft is V-shaped in all except *syama* and *maximus* where it is U-shaped (3, 28). In the centre its bottom is rounded but sometimes two thread-like points emerge from it. They are drawn in the figures of *nubilus* (16) and *nipalicus* (25). They are the edges of the curled membrane supporting the bridge and connecting it to the clasps. In all species a most troublesome non-chitinous membrane covers the arms and spreads across the clasps over the triangular legs of the bridge. It obscures the interior and can only be partially torn away by a dissecting needle, when in liquid. When dry it becomes hard and opaque. Genitalia can be affixed to a card by Durofix and detached by amyl acetate at a future examination.

f. Aedeagus. Distinct in *nubilus* (15), *elima* (10), and *ictis* (12). The others are alike seen ventrally (e.g. 2, 6, 21, 24) but the internal process may project from the edge of the orifice towards the uncus in fig. 1, 5, 8, etc. and be visible from the side view or lie against the back as in *schistacea* (19) and be invisible. The aedeagus of *maximus* has its sides straight and parallel.

Conclusion. If all the above characters of each species are taken together a difference in one or more points will be found from the total characters of any other species. The accepted names therefore are of species really separate and this examination results in nothing original. My own collection is incomplete and I have to thank the authorities of the British Museum (Natural History) for allowing me to examine their collection, but have not requested special permission to dissect rarities. The area treated is that of India, Pakistan, Burma, and Ceylon.

5, UPPER WIMPOLE STREET,
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14. PARASITIZING OF COMMON FRESHWATER TURTLE
LISSEMYYS PUNCTATA PUNCTATA (BONNATERRE)
BY THE COPEPOD *ARGULUS INDICUS* WEBER

On 10 December 1956 a specimen of the common freshwater turtle *Lissemys punctata punctata* (Bonnaterre) was collected from Gokalpur Lake, Jabalpur (M.P.), in a throw net along with several species of fish. The turtle was kept aside as a side collection since

the netting was intended for the investigation of the fish fauna. Later, on a closer examination of the turtle on its ventral side, some parasites, subsequently identified as *Argulus indicus* Weber, were observed at the basal portion of the anterior pair of appendages and attached to the skin of the plastron. The fact that these parasites make use of the aquatic turtles as hosts is not unexpected, though so far unrecorded.

Argulus indicus Weber has been previously recorded in India from *Ophicephalus punctatus* Bloch by Ramakrishna (1951) and from *Ophicephalus (Chana) gachua* H.B. by the author in 1958.

The genus *Argulus* though primarily ectoparasites of fishes are also found on other aquatic vertebrates. An American species *A. americanus* has been reported from the Salamander *Pseudobranchius striatus axanthus* and a tadpole of the frog *Rana heckscheri* Wright by Goin & Ogren (1956).

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REFERENCES

- Goin, Coleman J., & Ogren, Larry H. (1956) : Parasitic Copepods (Argulidae) on Amphibians. *Jour. Parasitology* 42 (2) : 172.
- Malaviya, R. B. (1958) : Parasitism of *Ophicephalus gachua* Hamilton by the Copepod *Argulus indicus* Weber. *J. Bombay nat. Hist. Soc.* 55 : 370-371.
- Ramakrishna, G. (1951) : Notes on the Indian species of the genus *Argulus* Müller (Crustacea : Copepoda) parasitic on fishes. *Rec. Indian Mus.* 49 : 207-215.

15. ON THE OCCURRENCE OF THE LEECH *OZOBRANCHUS BRANCHIATUS* (MENZIES 1791) (HIRUDINEA) IN INDIA (GULF OF KUTCH)

(With three text-figures)

Ozobranchus shipleyi Harding 1927, *O. papillatus* Kaburaki 1921, and *O. polybranchus* Sanjeeva Raj 1954 are the only three species of genus *Ozobranchus* recorded from India so far.

On 2 October 1962 the authors collected a few specimens of *Ozobranchus* from the plastron of a live turtle on the coast of Piroton